

9



81
-1

SEQUENCE LISTING

<110> Renner, Wolfgang A.
Hennecke, Frank
Nieba, Lars
Bachmann, Martin

<120> Ordered Molecular Presentation of Antigens, Method of
Preparation and Use

<130> 1700.0030002

<140> US 09/449,631
<141> 1999-11-30

<150> US 60/110,414
<151> 1998-11-30

<150> US 60/142,778
<151> 1999-07-08

<160> 88

<170> PatentIn Ver. 2.1

<210> 1
<211> 41
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<220>
<223> Description of Artificial Sequence: Primer

<400> 1
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<223> Description of Artificial Sequence: Primer

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cggtgggttac ctgctgcacg cgttgcttaa gcgacatgta gcgg

44

<210> 3
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 3
ccatgaggcc tacgataccc

20

9

82.

<210> 4
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 4 25
ggcactcacg gcgcgcttta caggc

<210> 5
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<223> Description of Artificial Sequence: Primer

<400> 5 47
ccttctttaa cgggtggttac ctgctggcaa ccaacgtggt tcatgac

<210> 6
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 6 40
aagcatgctg cacgcgtgtg cgggtggtcgg atcgcccggc

<210> 7
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<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer

<400> 7
gggtctagat tccaacccat tcccttatcc aggctttttg acaacgctat gctccgcgcc 60
catcgtctgc accagctggc ctttgacacc 90

<210> 8
<211> 108
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 8
gggtctagaa ggaggtaaaa aacgatgaaa aagacagcta tcgcgattgc agtggcactg 60
gctgggttcg ctaccgtagc gcaggccttc ccaaccattc ctttatcc 108

a

83

<210> 9
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 9
cccgaattcc tagaagccac agctgccctc c

31

<210> 10
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 10
cctgcggtgg tctgaccgac accc

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<210> 11
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 11
ccgcggaaga gccaccgcaa ccaccgtgtg ccgccaggat g

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<210> 12
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 12
ctatcatcta gaatgaatag aggattcttt aac

33

<210> 13
<211> 15
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Modified ribosome
binding site

<400> 13
aggaggtaaa aaacg

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<210> 14

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84

<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: signal peptide

<400> 14
Met Lys Lys Thr Ala Ile Ala Ile Ala Val Ala Leu Ala Gly Phe Ala
1 5 10 15
Thr Val Ala Gln Ala
20

<210> 15
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: modified Fos
construct

<400> 15
Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu
1 5 10 15
Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu
20 25 30
Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
35 40 45

<210> 16
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: peptide linker

<400> 16
Ala Ala Ala Ser Gly Gly
1 5

<210> 17
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: peptide linker

<400> 17
Gly Gly Ser Ala Ala Ala
1 5

<210> 18

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-5-

<400>	18						
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ctgaccgaca	cctctcaggc	ggaaaccgac	caggtggaag	acgaaaaatc	cgcgctgcaa	180	
accgaaatcg	cgaacctgct	gaaagaaaaa	gaaaagcttg	agttcatcct	ggcggcacac	240	
qgtgqtgtct	aagctt					256	

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<400> 19
Ala Ala Ala Ser Gly Gly Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala
                    5                                10                    15

Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
                20                        25                    30

Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
                35                                40                    45

His Gly Gly Cys
    50

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<220>
<223> Description of Artificial Sequence: Fos fusion construct

<400> 20																
gaattcagga	ggtaaaaaac	g	atg	aaa	aag	aca	gct	atc	gcg	att	gca	gtg				51
			Met	Lys	Lys	Thr	Ala	Ile	Ala	Ile	Ala	Val				
			1				5					10				
gca	ctg	gct	ggt	ttc	gct	acc	gta	gcg	cag	gcc	tgc	ggt	ggt	ctg	acc	99
Ala	Leu	Ala	Gly	Phe	Ala	Thr	Val	Ala	Gln	Ala	Cys	Gly	Gly	Leu	Thr	
				15					20					25		
gac	acc	ctg	cag	gcg	gaa	acc	gac	cag	gtg	gaa	gac	gaa	aaa	tcc	gcg	147
Asp	Thr	Leu	Gln	Ala	Glu	Thr	Asp	Gln	Val	Glu	Asp	Glu	Lys	Ser	Ala	
			30					35					40			

87

gaa aag ctg gag ttc atc ctg gcg gca cac ggt ggt tgc taagctt 196
 Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
 40 45 50

<210> 23
 <211> 52
 <212> PRT
 <213> Artificial Sequence
 <223> Description of Artificial Sequence: Fos fusion
 construct

<400> 23
 Ala Ala Ala Ser Gly Gly Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala
 1 5 10 15
 Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
 20 25 30
 Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
 35 40 45
 His Gly Gly Cys
 50

<210> 24
 <211> 204
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Fos fusion
 construct

<400> 24
 gaattcagga ggtaaaaaac gatggcttgc ggtggtctga ccgacaccct gcaggcggaa 60
 accgaccagg tggaagacga aaaatccgcg ctgcaaaccg aaatcgcgaa cctgctgaaa 120
 gaaaaagaaa agctggagtt catcctggcg gcacacggtg gttgcggtg ttctgcggcc 180
 gctgggtgtg gggatatcaa gctt 204

<210> 25
 <211> 56
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Fos fusion
 construct

<400> 25
 Lys Thr Met Ala Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr
 1 5 10 15
 Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn
 20 25 30
 Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly
 35 40 45
 Gly Cys Gly Gly Ser Ala Ala Ala
 50 55

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88
-8-

<210> 26
<211> 26
<212> PRT
<213> Homo sapiens

<400> 26
Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Ala Phe Gly Leu Leu
1 5 10 15
Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala
20 25

<210> 27
<211> 262
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Fos fusion
construct

<400> 27
gaattcaggc ctatggctac aggcctccgg acgtccctgc tctggcttt tggcctgctc 60
tgctgcctt ggcttcaaga ggcagcgct ggggtgtggg cggcgccttc tgggtggttgc 120
ggtggtctga ccgacaccct gcaggcggaa accgaccagg tggaagacga aaaatccgcg 180
ctgcaaaccg aaatcgcgaa cctgctgaaa gaaaaagaaa agctggagtt catcctggcg 240
gcacacggtg gttgctaagc tt 262

<210> 28
<211> 52
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Fos fusion
construct

<400> 28
Ala Ala Ala Ser Gly Gly Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala
5 10 15
Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
20 25 30
Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
35 40 45
His Gly Gly Cys
50

<210> 29
<211> 261
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Fos fusion
construct

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89

<220>

<221> CDS

<222> (7)..(240)

<400> 29

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gaattc atg gct aca ggc tcc cgg acg tcc ctg ctc ctg gct ttt ggc      48
      Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Ala Phe Gly
            1             5             10

ctg ctc tgc ctg ccc tgg ctt caa gag ggc agc gct tgc ggt ggt ctg      96
Leu Leu Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Cys Gly Gly Leu
      15             20             25             30

acc gac acc ctg cag gcg gaa acc gac cag gtg gaa gac gaa aaa tcc      144
Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser
            35             40             45

gcg ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa gaa aag ctg      192
Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu
            50             55             60

gag ttc atc ctg gcg gca cac ggt ggt tgc ggt ggt tct gcg gcc gct      240
Glu Phe Ile Leu Ala Ala His Gly Gly Cys Gly Gly Ser Ala Ala Ala
            65             70             75

gggtgtggga ggcctaagct t      261

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<210> 30

<211> 78

<212> PRT

<213> Artificial Sequence

<223> Description of Artificial Sequence: Fos fusion construct

<400> 30

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Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu
      1             5             10             15

Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Cys Gly Gly Leu Thr Asp
            20             25             30

Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu
            35             40             45

Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe
            50             55             60

Ile Leu Ala Ala His Gly Gly Cys Gly Gly Ser Ala Ala Ala
            65             70             75

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<210> 31

<211> 44

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 31

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90
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cctgggtggg ggcggccgct tctgggtggtt gcggtggtct gacc

44

<210> 32
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 32
ggtgggaatt caggaggtaa aaagatatcg ggtgtggggc ggcc

44

<210> 33
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 33
ggtgggaatt caggaggtaa aaaacgatgg cttgcggtgg tctgacc

47

<210> 34
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 34
gcttgcggtg gtctgacc

18

<210> 35
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 35
ccaccaagct tagcaaccac cgtgtgc

27

<210> 36
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 36
ccaccaagct tgatatcccc acaccagcg gccgcagaac caccgcaacc accg

54

9

9

~~11~~

<210> 37
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 37
ccaccaagct taggcctccc acaccagcg gc 32

<210> 38
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 38
ggtgggaatt caggaggtaa aaaacgatg 29

<210> 39
<211> 32
<212> DNA
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<220>
<223> Description of Artificial Sequence: Primer

<400> 39
ggtgggaatt caggcctatg gctacaggct cc 32

<210> 40
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 40
ggtgggaatt catggctaca ggctccc 27

<210> 41
<211> 59
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 41
gggtctagaa tggctacagg ctcccggacg tcctgtctcc tggcttttgg cctgctctg 59

<210> 42
<211> 58

9

92
-12-

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 42
cgcaggcctc ggcactgccc tcttgaagcc agggcaggca gagcaggcca aaagccag 58

<210> 43
<211> 402
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Modified bee
venom phospholipase A2

<220>
<221> CDS
<222> (1)..(402)

<400> 43
atc atc tac cca ggt act ctg tgg tgt ggt cac ggc aac aaa tct tct 48
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1 5 10 15

ggt ccg aac gaa ctc ggc cgc ttt aaa cac acc gac gca tgc tgt cgc 96
Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30

acc cag gac atg tgt ccg gac gtc atg tct gct ggt gaa tct aaa cac 144
Thr Gln Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

ggg tta act aac acc gct tct cac acg cgt ctc agc tgc gac tgc gac 192
Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60

gac aaa ttc tac gac tgc ctt aag aac tcc gcc gat acc atc tct tct 240
Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
65 70 75 80

tac ttc gtt ggt aaa atg tat ttc aac ctg atc gat acc aaa tgt tac 288
Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
85 90 95

aaa ctg gaa cac ccg gta acc ggc tgc ggc gaa cgt acc gaa ggt cgc 336
Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
100 105 110

tgc ctg cac tac acc gtt gac aaa tct aaa ccg aaa gtt tac cag tgg 384
Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125

ttc gac ctg cgc aaa tac 402
Phe Asp Leu Arg Lys Tyr
130

<210> 44

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93
-15-

<211> 134
<212> PRT
<213> Artificial Sequence
<223> Description of Artificial Sequence: Modified bee
venom phospholipase A2

<400> 44
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1 5 10 15
Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30
Thr Gln Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45
Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60
Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
65 70 75 80
Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
85 90 95
Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
100 105 110
Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125
Phe Asp Leu Arg Lys Tyr
130

<210> 45
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 45
ccatcatcta cccaggtac

19

<210> 46
<211> 34
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 46
cccacacca gcggccgcgt atttgcgag gtcg

34

<210> 47
<211> 36

a

24
-14

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 47
cggtggttct gcggccgcta tcattctaccc aggtac 36

<210> 48
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 48
ttagtatttg cgcaggctcg 19

<210> 49
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 49
ccggctccat cgggtgcag 18

<210> 50
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 50
accaccagaa gcggccgcag gggaaacaca tctgcc 36

<210> 51
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 51
cggtggttct gcggccgctg gctccatcgg tgcag 35

<210> 52
<211> 21
<212> DNA
<213> Artificial Sequence

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95
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<220>
<223> Description of Artificial Sequence: Primer

<400> 52
ttaaggggaa acacatctgc c 21

<210> 53
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 53
actagtctag aatgagagtg aaggagaaat atc 33

<210> 54
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 54
tagcatgcta gcaccgaatt tatctaattc caataattct tg 42

<210> 55
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 55
gtagcaccca ccaaggcaaa gctgaaagct acccagctcg agaaactggc a 51

<210> 56
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 56
caaagctcct attcccactg ccagtttctc gagctgggta gctttcag 48

<210> 57
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

a

96
-16-

<400> 57
ttcgggtgcta gcggtggctg cggtggtctg accgac

36

<210> 58
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 58
gatgctgggc ccttaaccgc aaccaccgtg tgccgcc

37

<210> 59
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: JUN amino acid
sequence

<400> 59
Cys Gly Gly Arg Ile Ala Arg Leu Glu Glu Lys Val Lys Thr Leu Lys
1 5 10 15
Ala Gln Asn Ser Glu Leu Ala Ser Thr Ala Asn Met Leu Arg Glu Gln
20 25 30
Val Ala Gln Leu Lys Gln Lys Val Met Asn His Val Gly Cys
35 40 45

<210> 60
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: FOS amino
acid sequence

<400> 60
Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu
1 5 10 15
Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu
20 25 30
Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
35 40 45

<210> 61
<211> 33
<212> DNA
<213> Artificial Sequence

<220>

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97
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<223> Description of Artificial Sequence: Primer

<400> 61

ccggaattca tgtgcggtgg tcggatcgcc cgg

33

<210> 62

<211> 39

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer

<400> 62

gtcgctaccc gcggctccgc aaccaacgtg gttcatgac

39

<210> 63

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 63

gttggttgcg gagccgcggg tagcgacatt gacccttata aagaatttgg

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<210> 64

<211> 38

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer

<400> 64

cgcgccccaa gcttctacgg aagcgttgat aggatagg

38

<210> 65

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 65

ctagccgcgg gttgcggtgg tcggatcgcc cgg

33

<210> 66

<211> 38

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

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98
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<400> 66
cgcggtcccaa gcttttagca accaacgtgg ttcatgac 38

<210> 67
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 67
ccggaattca tggacattga cccttataaa g 31

<210> 68
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 68
ccgaccaccg caaccgcgg ctagcggaag cgttgatagg atagg 45

<210> 69
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 69
ctaattggatc cggtgggggc tgcggtgggc ggatcgccc gctcgag 47

<210> 70
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 70
gtcgctaccc gcggtccgc aaccaacgtg gttcatgac 39

<210> 71
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 71
ccggaattca tggacattga cccttataaa g 31

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<210> 72
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 72
ccgaccaccg cagccccac cggatccatt agtaccacc caggtagc

48

<210> 73
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 73
gttggttgcg gagccgcggg tagcgaccta gtagtcagtt atgtc

45

<210> 74
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 74
cgcgccccaa gcttctacgg aagcgttgat aggatagg

38

<210> 75
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 75
ctagccgcgg gttgcggtgg tcggatcgcc cgg

33

<210> 76
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 76
cgcgccccaa gcttttagca accaacgtgg ttcatgac

38

<210> 77

a

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-20-

<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 77
ccggaattca tggccacact tttaaggagc 30

<210> 78
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 78
cgcgccccaa gcttttagca accaacgtgg ttcattgac 38

<210> 79
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 79
ccggaattca tggacattga cccttataaa g 31

<210> 80
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 80
cctagagcca cctttgccac catcttctaa attagtaccc acccaggtag c 51

<210> 81
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 81
gaagatggtg gcaaagggtg ctctagggac ctagtagtca gttatgtc 48

<210> 82
<211> 38
<212> DNA

9

10
~~21~~

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 82

cgcggtcccaa gcttctaaac aacagtagtc tccggaag

38

<210> 83

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 83

gccgaattcc tagcagctag caccgaattt atctaa

36

<210> 84

<211> 33

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 84

ggttaagtcg acatgagagt gaaggagaaa tat

33

<210> 85

<211> 30

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 85

taaccgaatt caggaggtaa aaagatatgg

30

<210> 86

<211> 35

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 86

gaagtaaagc ttttaaccac cgcaaccacc agaag

35

<210> 87

<211> 33

<212> DNA

<213> Artificial Sequence

9

102
~~22~~

<220>

<223> Description of Artificial Sequence: Primer

<400> 87

tcgaatgggc cctcatcttc gtgtgctagt cag

33

<210> 88

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Fos fusion
construct

<400> 88

Glu Phe Arg Arg

1